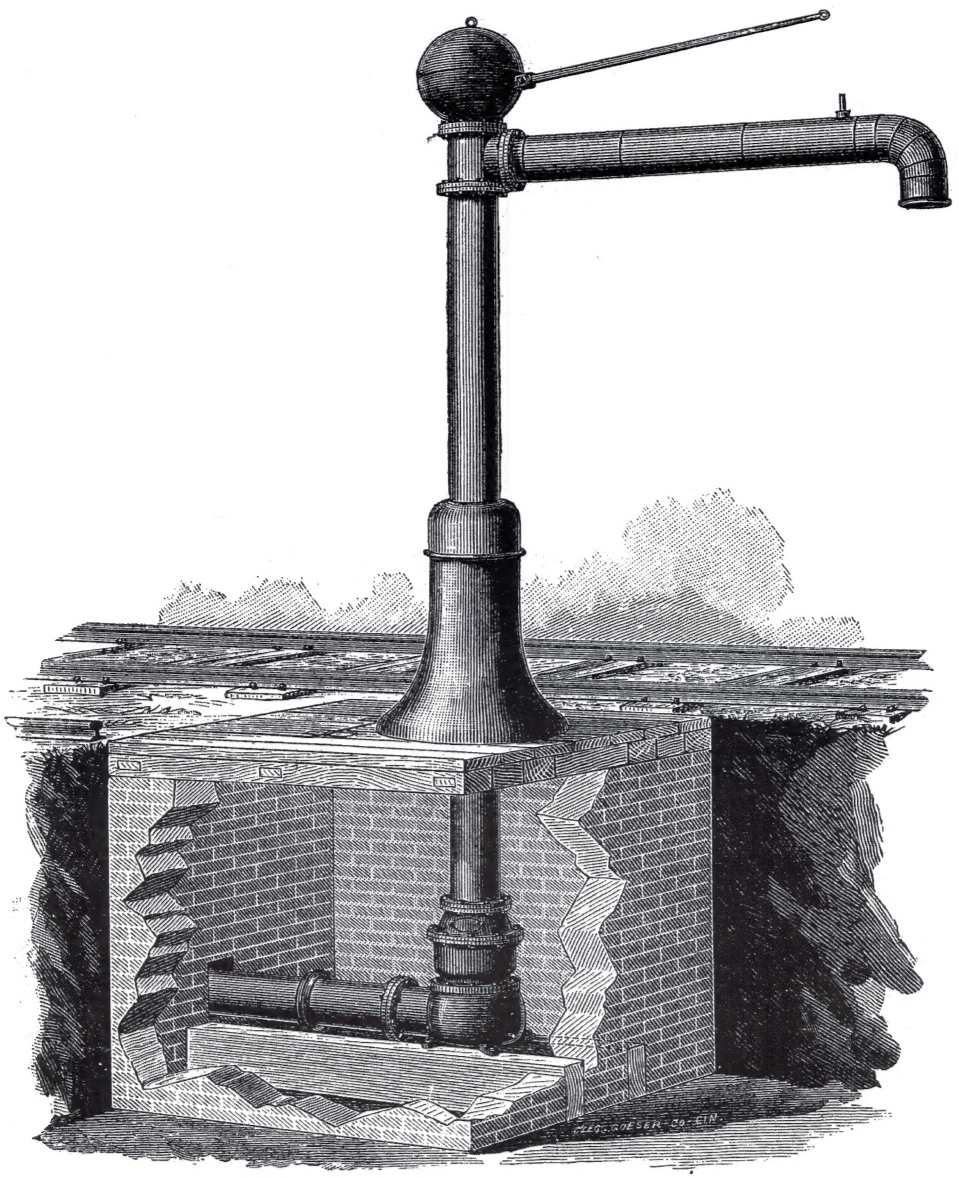
The Railway & Locomotive Historical Society

Quarterly

Fall 2008 - Winter 2009 Volume 28, Number 4 - Volume 29, Number 1 www.rlhs.org



The Railroad Station Water Column

2009 Annual Meeting Information
Pages 16 & 17
Register Today!

. . . And Other Topics from the Files of Steamdome

William D. Middleton on Revisiting Electrification

Paul Gibson on Membership Development

The Railway & Locomotive Historical Society Quarterly

Fall 2008 - Winter 2009 Volume 28, Number 4 - Volume 29, Number 1

Contents

3 From the Editor
4 The Telegrapher's Report
5 Electrification - Is It Time to Reconsider? *by William D. Middleton*
6 Exploring the Past with Steamdome
6 *The Railroad Station Water Column*
8 *The Union Pacific Omaha Bridge - 1872*
8 *The Great Omaha Bridge*
9 *Baggage Abuse*
10 Visual Interpretations *by John Gruber*
12 The Center for Railroad Photography & Art 2009 Conference
16 Railway & Locomotive Historical Society 2009 Annual Meeting Information
17 Railway & Locomotive Historical Society 2009 Annual Meeting ***Registration Form***
18 Chapter Reports
18 Marketplace

Front and Rear Covers: Water column illustrations from ***Railroad Gazette***, *September 21, 1883 (front) and June 1, 1872 (rear)*

www.rlhs.org

Member Services

Membership applications, change of address and other membership status inquiries should be sent to :

Dick Hillman
R&LHS Membership Secretary
3605 Sandy Plains Rd., Suite 240-198
Marietta, GA 30066-3066

Marketplace

Society members may use, without charge, the Marketplace section of the ***Quarterly*** and the R&LHS web site to advertise items they wish to sell, trade or acquire or to seek information from other readers. This service is intended for personal, not general commercial, use. All items should be sent to David C. Lester at the address below.

ARCHIVES SERVICES

The Railway & Locomotive Historical Society Archives Services provides four key services to members, which are listed below. All inquiries regarding these services should be addressed to R&LHS Archives Services, P.O. Box 600544, Jacksonville, Florida 32260-0544.

Locomotive Rosters & Records of Building Construction Numbers

The Society has locomotive rosters for many roads and records of steam locomotive construction numbers for most builders. Copies are available to members at 25 cents per page, 40 cents per page for non-members ($5.00 minimum).

Research Inquiries

Source materials -- printed, manuscript and graphic, are included in the Society's Archives. Inquiries concerning these materials should be addressed to the Archives Services address above. To help expedite our response, please indicate a daytime telephone number where you can normally be reached.

Back Issues of Railroad History & The R&LHS Bulletin

All back issues of RAILROAD HISTORY are available from Alden H. Dreyer. R&LHS members pay $7.50 per copy for in-print editions, non-members $16.00 for 192 and newer (large size), $12.50 for others (small size); out-of-print editions somewhat higher. A quantity price list is available. Nearly all editions of the R&LHS BULLETIN, Nos.65-126, are available, and some earlier ones, priced individually based upon supply, demand, condition and R&LHS membership status. Shipping is free within the USA. Shipments outside the USA pay differential only. Contact Alden at 91 Reynolds Road, Shelburne MA 01370. Telephone: 413-625-6384 800am-800pm Eastern Time daily. Fax: 413-625-8346. Email: ***alden.javanet@rcn.com*** (please limit to 30KB)

The Railway & Locomotive Historical Society

Quarterly

© Copyright 2009, The Railway & Locomotive Historical Society

J. Parker Lamb, President
2605 Pinewood Terrace
Austin, Texas 78757-2136

David C. Lester, Editor
215 Bent Oak Lane
Woodstock, Georgia 30189-8121

Dick Hillman, Associate Editor
3605 Sandy Plains Road, Suite 240-198
Marietta, Georgia 30066-3066

Editorial Advisory Board

James Caballero
George Drury
John Gruber
William F. Howes, Jr.
William D. Middleton

From the Editor

Membership Development in 2009 / R&LHS Annual Meeting in Portland, Maine

While the economic downturn presents challenges to all organizations, the Railway & Locomotive Society is focusing aggressively on member retention and member development. The Society's membership development coordinator, Paul Gibson, shares his thoughts and plans for 2009 in his piece beginning on page 4. The Society has increased its presence at train shows around the country, resulting in the addition of at least 30 new members since the beginning of 2009. A recurring message from those who attend the shows, and join the Society, is that they were heretofore unaware of our existence. That's pretty amazing for an organization that was founded in 1921. Clearly, we have some work to do.

The Society is also implementing a new advertising campaign which, at this time, is focused on a new membership brochure, along with a new design for some of our print ads. An example of one of our new ads is found on page 19, and reflects the excellent design work of Kevin Holland, the Design Editor of our flagship publication, ***Railroad History***.

Despite the Society's membership recruiting and advertising efforts, we know that 2009 will be a tough year. One cost control measure we've taken is to combine the Fall 2008 and Winter 2009 issues of the ***Quarterly***. This will be a one-time combination of issues, and you will receive three more issues in 2009.

As you may have heard, the Society's 2009 Annual Meeting will be held in Portland, Maine from June 18 - 21. Jerry Angier is the chair for this year's gathering, and has put together an exciting agenda. Complete information and a registration form is found on pages 16 and 17. If you don't wish to damage your copy of this issue, simply make a copy of page 17, complete the required details, and mail it to the address noted, with your payment.

The Steamdome Files

This issue features several articles from the files of Steamdome. We believe that you'll enjoy the articles on Pouge's Water Column, the building of Union Pacific's bridge over the Missouri River at Omaha in the late nineteenth century, and the brief story on the railroads' thoughts around passenger baggage at the beginning of the 20th century.

If you travel by air today with any frequency, you'll be reminded of the "baggage circus" that occurs as passengers board the airplane, frantically looking for overhead and under-seat space for their bags. Passengers are motivated to bring as much as they can on board to avoid the checked baggage fee of $15.00 implemented by many of the major carriers.

Given the amount of change that has occurred between the date of the Steamdome article and today, it's interesting to see that the subject of carrying bags and packages aboard when traveling was as hot a topic in 1904 as it is today.

The Center for Railroad Photography & Art's Annual Conference

We present a preview of the 2009 "Conversations About Photography" conference at the Center for Railroad Photography & Art beginning on page 12. John Gruber, the President of the Center, and a regular columnist for the ***Quarterly***, has worked with his team to put together an expanded program at this year's conference. I have attended the conference for each of the past five years, and if you have the opportunity to attend, you will find it very worthwhile. Complete information, along with the Center's website, is found in the article.

Agricultural Demonstration Trains

John Gruber, in his *Visual Interpretations* column beginning on page 10, showcases a photograph of a Southern Pacific agricultural demonstration train in Erath, Louisiana in October 1910. Those who have studied the history of the Southern Pacific and the development of the American West recall that the SP was often portrayed as a negative force in the development of the West, focused only on what was good for the railroad, and caring little about the company's impact on the average citizen. Indeed, Frank Norris's 1901 novel, ***The Octopus***, reflected the popular sentiment of the day. This view of the SP was challenged, however, by Professor Richard J. Orsi, in his 2005 revisionist history of the SP, ***Sunset Limited: The Southern Pacific Railroad and the Development of the American West*** (University of California Press), and his book highlights the railroad's agricultural demonstration trains, among other activities of the railroad, as a force for positive development in the region. If you're not familiar with Orsi's work, I encourage you to review it.

David C. Lotz

The Telegrapher's Report

Membership Recruiting Efforts Off to a Strong Start in 2009

by Paul Gibson, Membership Development

The Railway & Locomotive Historical Society shares a problem common to most other rail history organizations today - the challenge of attracting new members to our group.

A changing interest profile among today's younger rail enthusiasts, and growing competition for their time and discretionary spending dollar, have slowed the rate of new members joining up. Link this with natural attrition as we lose older members from our ranks, and the growth of rail historical groups has slowed compared to what it was 10 and 20 years ago. In fact, in my experience contacting various railroad historical organizations, you would be hard pressed to find a group that is growing unless they have a concerted effort in place to attract and keep new members.

The Society has an advantage over most other groups though. Rather than focusing on just one railroad, the wide scope of our publications and activities cover a broad range of rail interests, so we have a natural appeal to a wider range of potential new members. Plus, our rich legacy of well indexed past publications, Archives and Archives Services offer a source of research material not readily available outside of major university libraries or museums. Bill Howes, R&LHS VP of Member Services, recently stated "In addition to our fine publications (past and present and well indexed), we offer access to our extensive collections of locomotive photographs (including builders' photos and specifications), facility photographs, locomotive builders' records and railroad locomotive rosters."

We have a lot to offer anyone interested in rail history. And we can build membership in R&LHS by presenting these benefits to a wider audience - rail historians, railfans, railroad modelers and others, while making sure we keep the members we already have.

Moving into 2009 and beyond, we'll be trying a three pronged attack to develop more members:

First, we'll go after folks who have already demonstrated a serious interest in rail history, because they are members of other rail history associations.

There are dozens of other rail history societies out there with thousands of members, many of whom know little or nothing about our own group. Yet, a large portion of them would be interested in joining with us if we can find a way to reach them with our message. We're starting to do this through cross-marketing efforts with these other rail history organizations.

As this is being written, we already have commitments in place with two other rail history societies to exchange ads in each other's publications on a quid pro quo basis.

And with a third group, in addition to swapping ads, we'll also allow them to reprint a recent article from RRH they feel would be of high interest to their members. This approach is a win/win because both groups gain a terrific opportunity to tell their story to a highly targeted group of readers, and encourage new membership at a very minimal cost. What better way to catch fish than to throw your hook in where the fish are?

We're already discussing similar agreements with other rail history societies, and here's a place where you can personally jump in and help with this effort. If you are a member or an officer of other rail history oriented groups, help us make contact with the right people to find out if they are interested in a similar "swap". It's been surprising how many leaders in these other groups want to pursue this opportunity, once they understand how easy and beneficial it can be it can be for their organization. They recognize we are all in the same boat when it comes to increasing membership, and they want to start fishing.

Second, we're taking the R&LHS story to groups that traditionally know little about us by ramping up our presence at train shows around the country - both railroadiana shows and mixed train/model railroading shows. Dick Hillman in Atlanta, Charlie Stats in Chicago and Bill Howes in Florida, along with crews from their Chapters, have been setting up sales tables at shows in their areas. They offer back issues and reprints of our publications, plus up to date information about our society, and are ready to put a friendly face behind the R&LHS name. Many train show attendees comment they knew nothing about the Railway & Locomotive Historical Society before this.

And these show crews have reported real success at signing up new members - Dick Hillman brought in seven new members at the last Atlanta show alone!

We have R&LHS tables scheduled again at the Jacksonville and Atlanta shows in January, and we will have a table at the Amherst Ry. Society show in West Springfield, MA in late January. This is a two day show with attendance reaching 20,000. Also in January, Ken and Ann Miller will be trying a couple of shows in the New Jersey area.

Later in 2009, we expect to have a table at large railroad shows in Kansas City and Gaithersburg, MD.

A good start, but again, we need your help to get the word out at more train shows in 2009. We can provide you with all the materials to set up a table – back issues, reprints and membership info brochures, plus a really eye catching banner for hanging over the table.

Many show promoters are happy to have historical groups like ours participate in their shows and many will provide a table at no cost, or if necessary, we can help with table costs. There are numerous large, quality train shows in 2009 and we really need your help to staff tables at as many of these as we can, particularly on the West Coast, in the Midwest and Southwest. If you are interested in helping with this, contact me for details.

And third, its very important we retain current members. Now that Sigi Walker has taken over the job of record keeping for membership renewals, we will again have a reliable data base to identify past members who have not re-enrolled. Next year will see a robust campaign for contacting and encouraging these non-renewals to come back with us.

If you have questions or thoughts that would help us grow the membership in R&LHS, please contact me. We're always looking for your fresh ideas and enthusiastic support. My email address is ***paul@railpub.com.***

* * * * * * * * * *

Electrification In Railroading - Is It Time to Reconsider? *by William D. Middleton*

"Time to revisit electrification?" asked William C. Vantuono, editor of ***Railway Age*** in his September 2008 edition. The last time railroads had seriously looked at electrification had been during the oil crisis of the mid-1970s, when oil had become both scarce and high-priced. The problems passed and diesel-electric locomotives continued to improve in their technology. Now the same problems of diesel fuel are again coming front and center, and electrification is again receiving serious consideration.

The specific news line for the ***Railway Age*** report was a proposal by Burlington Northern Santa Fe (BNSF) to investigate the feasibility of building high-tension power lines along its lines to link large quantities of electric power generated from wind turbines along the eastern slope of the Rocky Mountains to locations like California where it's most needed. "Instead of acquiring land and building thousands of miles on high-tension line," said Vantuono, "why not piggyback on an existing right-of-way—like a railroad?" BNSF is already leasing such transcontinental rights-of-way to fiber-optic companies in exchange for capacity for communications and data transmission. In exchange for access to discounted electric traction power for trains, BNSF could lease right-of-way space to an electric utility, tapping into the high-tension lines for 25kV or 50 kV catenaries to power electric or perhaps even dual power locomotives, say Vantuono.

The BNSF study is an intriguing question to consider, but it's hardly new. Thomas Alva Edison had already worked out the idea of wind-powered electric trains some 125 years ago.

The wind-power electrification studies of the 1880s came out from the joint interests of Edison and Henry Villard, who had become president of the Northern Pacific in 1881. As we discussed in the ***Quarterly's*** Winter 2008 issue, Villard had developed a keen interest in electrification, and had become acquainted with Edison through his membership on the Edison Electric Light Company board. In 1880 Edison had built a small electric locomotive at his Menlo Park, New Jersey laboratories. Villard was interested in considering the possibility of using electric power to haul the large wheat crops of the Northern Pacific railroad, and had reached an agreement with Edison to build a larger track about three miles long at Menlo Park. The new line was completed in 1881 and tests were continued into 1882. Late in 1881 the ***Railroad Gazette*** of November 25, 1881, reporting from a news item in the ***St. Paul Pioneer-Press***, said that a recent contract between Villard and Edison called for the construction of 50 miles of railroad between St. Cloud and Minneapolis and St. Paul during 1882. Villard had agreed, said reporters, that he would pay an established sum for the 50-mile experimental railroad if the tests were successful. Edison had carefully worked out the plans for the road. He had also secured all the data he would need on the winds of the Great Plains, where he proposed to power the trains with electricity generated from large windmills. Success was defined as achieving a cost per ton-mile which was less than that of a steam railroad.

While the new experimental line at Menlo Park worked well, the 50-mile windmill-powered Minnesota wheat line never materialized. By this time the Northern Pacific had entered bankruptcy, and Villard was no longer in control. Edison did little more on railroad electrification. A joint venture of Edison with Steven D. Field, largely on work by Field, produced a small electric locomotive, The *Judge*, which ran at the National Exposition of Railway Appliances in Chicago in 1883, where it did well, and the locomotive was then sent to Louisville, Kentucky, for use on the Southern Exposition grounds of Central Park, but this was the end of Edison-Field experimentation. Over the next decade railroad electrification would reach practicality by the work of such electricians and inventors as Leo Daft, John Henry, Edward Bentley, Walter Knight, Sidney Shirt, Charles Van Depoele, and Frank Sprague. Edison's failure to continue with electric railways was due simply to his involvement with the development of electric illumination. "I could not go on with it because I had no time," Edison told ***Electrical World*** in August 9, 1884, "I had too many other things to attend to, especially in connection with electric lighting."

The Railroad Station Water Column

Water columns were located at railroad stations to refill tenders while trains waited for passengers to load and unload during stops. Water came from nearby tanks or from city water systems. The swinging spout could service two tracks by moving it from right to left. John Newton Poage began the manufacture of his column in about 1873 at the McGowan Pump Company, Cincinnati, Ohio. Poage was born in Ohio in about 1825, and he died on October 29, 1908. He lived in suburban College Hill, but further details of his life are scarce. By about 1880, Poage had his own factory and it continued to make these columns into the 1920's. Just when such devices were introduced is uncertain, but a photograph of one, maker unknown, is shown at the B&O's Grafton, West Virginia station in an 1858 view reproduced in John Stover's B&O history, 1987, p. 87. We found these patents for Poage water columns: May 20, 1873, 139,188; December 2, 1873, 145,236; July 22, 1879, 217,817; and, January 13, 1880, 223,607.

An advertisement from the ***American Railroad Manual****, 1873, p. xxii.*

Poage's Automatic Water Column

Figure 2 in the accompanying illustration represents a perspective view of a water column, or water crane, for supplying locomotive tanks with water, which was exhibited at the Chicago Exposition of Railway Appliances, and which is extensively used on different railroads of this country.

The automatic feature consists of supporting the column on rollers and inclined planes, so that when the discharge spout is moved at right angles with the track, and communicates with the tender, the column is raised up, and when the spout is released it will be turned automatically by the weight of the column, so that the spout will always stand parallel with the track, when not in use, and thus be out of the way of passing engines.

The mechanism by which this is effected is shown, although somewhat imperfectly, in figure 2. A collar (13) is attached to the vertical column (9). The under side of this collar forms what may be called circular inclined planes, and these rest on rollers (14). As the column is turned, the inclined planes roll up on the rollers and thus raise the column. Each inclined plane occupies a quarter of the circumference of the collar, so that when the spout (8) is turned from a position parallel with the track to one at right angles to it, the inclined planes move on the rollers (14) from their highest to their lowest points. When the lowest points on the inclined planes rest on the rollers, then the column is raised up highest and if released will then roll down by its own gravity and thus turn the spout as already described.

These water columns are manufactured by John N. Poage, at Court and Harriet streets, Cincinnati, Ohio.

Article and illustration on page 7 from the ***Railroad Gazette****, September 21, 1883*

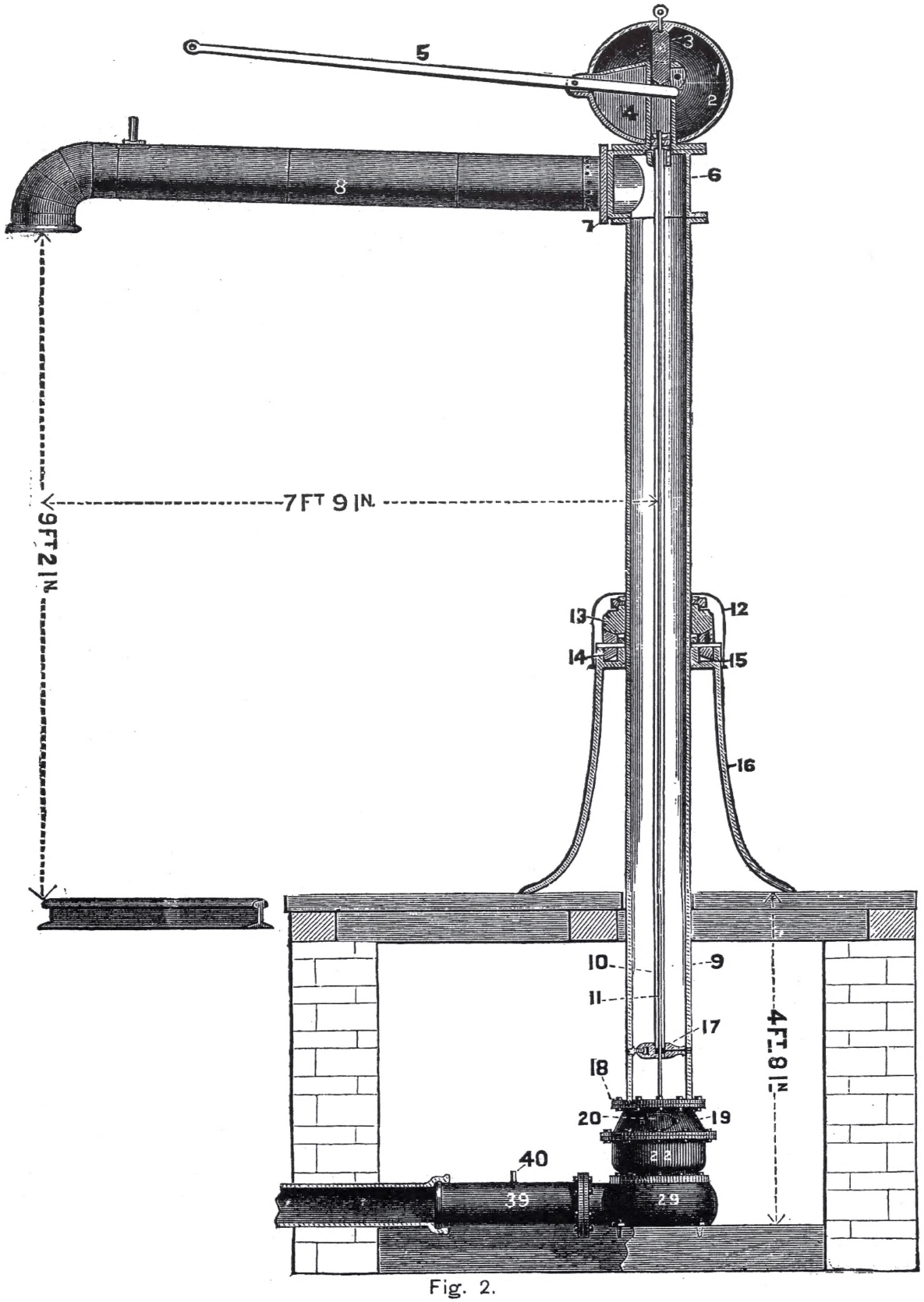
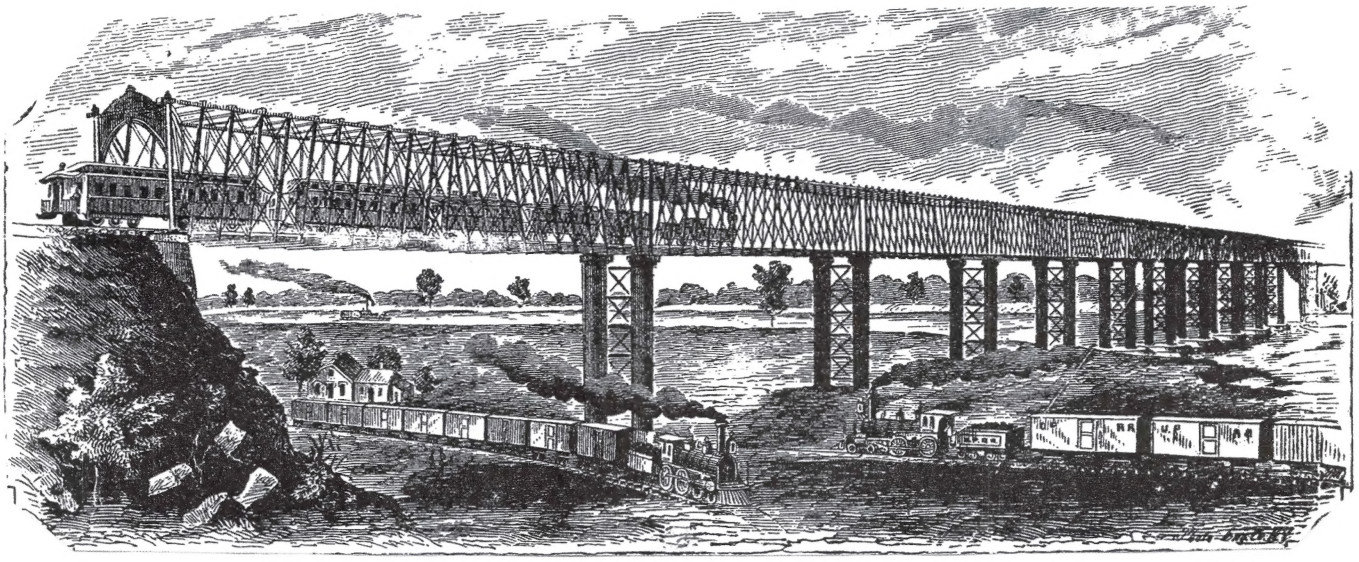


Fig. 2.

POAGE'S AUTOMATIC WATER COLUMN

The Union Pacific Omaha Bridge -- 1872

from the notebook of Steamdome



Collection of Steamdome

While the transcontinental railroad was being pushed across the plains, plans were under way for a major bridge across the Missouri River to connect Omaha and Council Bluffs. Plans for the 2,750-foot bridge were ready by May 1868. It would have eleven spans, each 250 feet long. The trusses were on the 1863 patented design of Simeon Post. A contract was awarded to Lucius B. Boomer of Chicago, the American Bridge Company after 1870, for $1.7 million. Work started in March 1869 but was suspended in late July of that year because of legal and financial difficulties. A new contract with the same contractor, at $2.5 million got work moving again by April 1870. Time was a wasting, the railroad had opened to Sacramento almost a year earlier. Meanwhile, several river boats, such as the Metamora mentioned in the text below, ferried goods and passengers across the river. The bridge was finished in March 1872.

The curious tubular piers used to support the trusses in place of more common stone piers was selected because of about sixty feet of sand that separated the bottom of the river from the bedrock. The pneumatic process blew away some of the sand so that the tubes could sink slowly down to the bedrock. It was a slow and labor intensive process, 500 men were needed, but engineers felt that ordinary wooden piles would not work. The tubes were 8.5 feet in diameter and 10 feet long. As they slowly sank down through the sand and muck, new sections were bolted on. Men climbed down rope ladders to reach the bottom of the tubes. Here they filled large buckets that were lifted to the surface by donkey engines. Two men died because of too much pressure in the air lock. Each of the 22 tubes was filled with stone and concrete when finished.

Just before dawn on August 25, 1877, the east end of the bridge was hit by a violent storm that toppled 500 feet of it into the river. The piers were not damaged. Rail traffic was shut off, but so was the telegraph and the roadway for wagons and horse cars. Temporary spans were erected quickly. Permanent repairs, of course, took longer.

The Great Omaha Bridge

From the ***Omaha Herald****, July 23, 1870.*

We yesterday visited the bridge site for the purpose of taking notes of the progress that is being made on this gigantic structure.

The work is being carried on under the immediate supervision of T.E. Sickles, Esq., Chief Engineer of the Union Pacific Railroad, assisted by an able corps of experienced engineers and mechanics.

The supervision and inspection of machinery, necessary to carry on the work, is under the eye of Fred E. Sickles, Esq., a very able and practical mechanical engineer. The setting up of the engines and care of motive power is in the hands of John Smith, Esq., who has earned the reputation of being a first-class machinist and hard worker.

The wood work necessary to place the machinery in position, consisting of immense derricks firmly seated on two half barges, cut in two and made strong for this purpose, is carried on under the efficient management of Mr. Charles A. Hayes, a practical ship carpenter, and so

far has constituted no small part of the beginning of the end. We found two of these derrick barges on the west bank, nearly in readiness for final machinery, and were told they will be towed to position in the middle of the river, firmly anchored, and the work of sinking columns on two more pier sites begun in a day or two.

The Metamora is being overhauled, and will be used by the company as a towboat, commanded by Captain Davidson.

The thimble tubes are 10 feet long and 8.5 feet in diameter, 2 3/8 inches thick, and weigh 18,000 pounds each. Yet a system of snatch-blocks places one of them on a narrow gauge platform car, made for the purpose, is pushed to the pier site on a temporary track, hoisted to position and held by means of a combination of blocks, tackle, etc., attached to the large derrick, firmly bolted to the top of the tube or column last sunk, the air lock replaced on top, and the work of sinking it resumed.

The pneumatic system of sinking these columns is to most people a very novel process, interesting to witness, and deserving close attention and study. Space will permit a brief description.

A small engine forces air down into the column, through an inner pipe, the only escape being under the bottom edge of the tube while it is being sunk, the air thus excluding the water, which would otherwise fill the column and prevent the men from working; this part of the process being analogous to that experienced in operating a diving bell.

The sand and clay are excavated by the men, and hoisted out by a separate hoisting engine through the air lock, the weight of the column sinking itself gradually as the earth is removed, and being kept in place by means of nicely adjusted pulleys.

The column near the east bank now being sunk, has been put down at the rate of twelve feet per day, and at one time it was sunk ten feet in an hour.

While the work of sinking is being carried on, the men whose business it is to remain on the inside are obliged to work under a pressure of from one to forty pounds per square inch, varying according to the depth of the column, experiencing no inconvenience after becoming accustomed to it. It has demonstrated that strictly temperate men are able to work under a greater atmospheric pressure than men addicted to drink, and where accidents have occurred in other places, they have been traced to this fact.

A regular system of telegraphing is carried on between the workmen in the column and the foremen on the outside, for the purpose of giving orders and preventing accidents.

A table is furnished the engineer to guide him regarding the number of pounds of air to be forced at certain depths, and the greatest care is taken that no more is forced in than the workmen can bear.

The work is progressing as fast as brains, muscle and money can push it, and, if necessary, one year from today, trains will be crossing one of the finest structures on this continent.

The *modus operandi* of sinking the tubes or caissons is under the immediate management of George Miller, Esq., who has had large experience in this kind of work. He was selected by Mr. Sickles, having occupied a similar position under Mr. Sickles during the construction of the Harlem bridge, and he may well be proud of the record that, during all the time he had charge there (five years) not an accident happened to life or limb, and under his watchful care and scientific management of such heavy and cumbersome material as is of necessity brought into requisition, no accidents to employees can happen or is anticipated.

The east bank of the river at the bridge site presents a novel spectacle, and the first questions are: "What are those huge thimbles for ?", "How are they moved?", "How do you fasten them together?", etc. Very brief questions, but requiring a column to properly answer either of them.

Baggage Abuse *From **Science of Railways**, Volume 5, 1904*

The habits of the suburban traveler are peculiar and his necessities many. The railway is to him a furniture wagon and a butcher's and grocer's cart. It is, moreover, the receptacle of his linen and other odds and ends of domestic life. Upon a particular day the passengers upon a Chicago line were observed to carry nine hundred baskets of peaches into the cars within the space of three hours. The fruit was placed under the seats and in other convenient places. There was nothing concealed; nothing surreptitious about the transaction. Afterward, when the company attempted to break up the practice of carrying packages into the coaches in consequence of the injury to its express business and damage to the upholstery of the cars, the effort was met with bitter resistance. The practice had become a habit, at once convenient and profitable to the traveler. The suburban passenger believes he is entitled to a given quantity of baggage; that as he has no baggage, he should be permitted to carry packages instead. The argument is without force, for the reason that the fare he pays is very low and based on the carriage of persons only. Nevertheless, railways seldom seek to interfere with the carriage of packages by their patrons so long as they restrict themselves to such as may be carried in their hands without damage to the property of the company.

Visual Interpretations by John Gruber

An Online, Illustrated History in a Nutshell of American Railroads

A quick-and-easy illustrated guide to America's railroad history called "North American Railroad History in a Nutshell" is now available online as a feature of railroadheritage.org (click on Nutshell) and as a service of the Center for Railroad Photography & Art. It also can be reached through the center's Internet site, railphoto-art.org. The project was underwritten by the North American Railway Foundation as part of its general support of the development of railroadheritage.org, which has 1,200 images about many of the scores of aspects of the railroad in the U.S. as well some images from Canada and Mexico.

Nutshell distills these hundreds of images down to thirty-two that cover everything from the beginnings of railroading in the U.S., illustrated with a copy of a daguerreotype of the locomotive "Tioga," to the modern preservation movement, illustrated with one of noted photographer David Plowden's earliest photographs, a Canadian steam engine that now pulls excursion trains.

In between the beginnings of railroading and the modern preservation efforts, the topics cover the transition from steam to diesel, the story of railroad regulation from the nineteenth century through the Staggers Act of 1980, and much more, all aimed at demonstrating how railroads came to span the North American continent and literally transformed it. A sound bite recorded by a Burlington Northern executive involved in developing the coal deposits of the Powder River Basin in Montana and Wyoming accompanies the entry about the railroad boom there.

The descriptive texts have been developed by the Center's staff with the assistance of railroad historians and specialists from around the U.S. Photographs have been supplied by leading contemporary photographers like Plowden, railroad museums from coast to coast, the Arthur Dubin and Munson Paddock collections at Lake Forest College, the Center's own collections, private collectors, and individual photographers with specialties that mesh with some of the topics.

Research on the images has been exhaustive and is ongoing. For example, the California Railroad Museum at Sacramento, a collaborator, has a large cache of Southern Pacific images. Among them is a beautifully composed and lighted panorama photograph of an SP/Louisiana State University agricultural education train, made in October 1910 in the small southern Louisiana community of Erath—pronounced Ee-rath. The New Orleans Picayune carried daily stories about the tour, which ended at Erath, where the turnout surpassed the size of the town and local schoolchildren sang.

The image shows how trains brought universities to far-flung and small communities in many parts of the United States, and demonstrates that various scientific findings could aid local economies and teach citizens at the same time. In Louisiana the displays in the special railroad cars and the instructors who traveled with them tackled the subjects of how to grow crops successfully. The excitement generated by the train is virtually palpable in the panorama. The nationwide publicity aroused hopes by the SP and LSU that people from northern states would abandon their one-crop climates and move to southern Louisiana's multi-crop climate.

The Center welcomes comments and suggestions about Nutshell. No less a scholar than John Stilgoe of Harvard has already recommended it to his students, who also take advantage of the entire railroadheritage.org site. Stilgoe has suggested additional topics and improvements to entries on the site, and the Center encourages and appreciates similar reactions from viewers. All aspects of railroading are fair game.

The Center is a nonprofit arts organization that preserves and presents significant images of railroading, interpreting them in print, exhibitions, and on the Internet. This focus is critical for the Railroad Heritage community, since images reach far wider audiences than museums, vintage trains, and equipment alone. The visual representations feature all aspects of America's railroads—workers, travelers, advertising and publicity, and more. The center collaborates with other institutions to present exhibitions and with scholars for resources. Its conferences and publications are a vital part of its mission. The center is located at 1914 Monroe St., P.O. Box 259330, Madison, WI 53725-9330, telephone 608-251-5785.

This extraordinary panoramic photograph of the Southern Pacific agricultural demonstration train at Erath, Louisiana, on October 15, 1910, is by Edward Kemp, the SP's official photographer for the twelve-day tour. Erath was the last stop and generated enormous excitement, according to the New Orleans Picayune. Louisiana State University joined SP in the venture. SP hoped greater agricultural production resulting from exhibits and instruction given by professors would bring greater freight and passenger business. Other Kemp photos in this series show William R. Dodson, director of the Louisiana Experiment Station who was largely responsible for the train, addressing the crowds. *California State Railroad Museum*

The Center for Railroad Photography & Art 2009 Conference

An impressive, expanded program -- renowned presenters, a discussion of publishing, book signings, a photography exhibition, print sales, and social gatherings -- is being readied for the Center's seventh "Conversations About Photography" conference April 17-19, 2009, on the campus of co-sponsor Lake Forest (Illinois) College.

Friday, April 17

New in 2009, we will kick off the conference Friday evening with an social gathering at the Glen Rowan House. Meet the presenters and other attendees, and view a photography exhibition by Jim Shaughnessy from his new book, ***The Call of Trains: Railroad Photographs*** by Jim Shaughnessy.

Photograph courtesy of Don Sims

Saturday, April 18

Saturday's speakers will include . . .

Don Sims, Northridge, California, attributes his love of trains to a childhood case of the measles. Homebound by the illness, he passed the days logging the Central Railway of New Jersey steam locomotives that stopped at the suburban station across the street from his family's apartment in Plainfield, New Jersey. Since 1943 he has lived in Southern California, aside from a few brief stints in Oregon. His railroad photography and writing were fostered by various railroad jobs while he was an undergraduate at UCLA, where he earned a Bachelor of Science degree in Transportation and Traffic Management. Don later received a Masters of Science in Economics from USC. Now retired, he spent most of the past forty years teaching Economics at the community college level. Sims is married with three children, seven grandchildren, and an eight-month-old great-grandson.

Photograph courtesy of Kevin Scanlon

Kevin Scanlon, Pittsburgh, Pennsylvania, has spent the last thirty-five years documenting heavy industry and railroads across the country. He is drawn to subjects such as steel mills (both working and abandoned), the coalfields of southern West Virginia, and the nation's railway systems (focusing primarily on railroads in Appalachia). His images capture an important historical era that spans the end of the twentieth century into the new millennium. Kevin's photographs have been displayed at several art museums and galleries as well as appearing in various railroad-themed books and magazines, and on the covers of the literary journal ***Paper Street***. He is currently working on a series of industrial landscapes in the Pittsburgh area.

Mark W. Hemphill will present "The Railwaymen of Iraq, Turkey and Syria", a personal account of railway workers in the Middle East. Hemphill spent 20 months as the Senior Consultant - Rail for the Iraq Reconstruction Management Office, assisting in the reconstruction of Iraq's national railroad system.

Jamie M. Allen is curatorial associate in the Department of Photographs at the George Eastman House. She will offer her thoughts on railroad images at George Eastman House, including its recent railroad themed exhibitions

Stuart Klipper, Minneapolis, Minnesota, was born in The Bronx in 1941, near the massive Van Ness yards of the New York, New Haven & Hartford Railroad. He attended the University of Michigan where he received an AA degree. For nearly 30 years he has made photographs in all 50 states, distilling and crystallizing the defining characteristics of American regions: the fruit of enterprise, and the sullied tumult. Of high and special significance is infrastructure, and most significantly in that category, the railroads. Klipper's panoramic photography examines how railroads interplay both in the complex weave of culture and in the lay of the land. His photographs have been exhibited and collected by major national and international museums including: the Museum of Modern Art, the San Francisco Museum of Modern Art, The Art Institute of Chicago, the Walker Art Center, and the The Victoria and Albert Museum, among numerous others. Klipper has been the recipient of major grants and fellowships from the Guggenheim Foundation, the Bush Foundation, and the McKnight Foundation.

Photograph courtesy of Kelly Lynch

Kelly Lynch, Spencerville, Indiana, is an up-and-coming filmmaker whose award-winning projects often feature aspects of railroading such as metaphor, backdrop, or character. Educated at Columbia College (Chicago), the New York Film Academy, and Universal Studios in Los Angeles, Lynch currently serves as the railroad transportation coordinator for the Indiana Film Commission and writes, directs, and produces his own character-driven features. Named as one of the under-35 leaders in railroad preservation by ***Trains*** magazine in 2005, Lynch helps preserve, operate, and promote historic steam locomotives as well as modern railroading via cinematic means throughout the country. The Center has said that his work carries "a strong feeling of a timeless man-machine relationship." At the conference, he will explore that relationship as showcased through the motion picture, and study the use of iconic railroad imagery in film.

Steve Barry, editor of ***Railfan & Railroad*** magazine, will make a short presentation about the intersections of documentary and creative photography.

Kevin P. Keefe and **John B. Corns** will look back on their travels together as writer and photographer on a wide variety of projects. Keefe joined the staff of ***Trains*** magazine in 1987 and now serves as publisher. Corns is a widely published railroad photographer and was previously the company photographer for CSX.

Jeff Brouws will introduce the Center's print program. The print program consists of two fund raising events at the 2009 conference. In one of them, a silent auction, we will auction off three photographs -- two by Richard Steinheimer and one by David Plowden -- all silver-gelatin prints signed by the artists. The second offers each member the opportunity to collect important and interesting images from the world of railroad photography, all at an affordable price. Beginning with the conference this year, there will be two archival pigment prints by Jim Shaughnessy, signed by the artist in pencil on the back, printed on Epson Exhibition Fiber paper, in editions of 25, and made under Jim's supervision. Future participating photographers might include Mel Patrick, John Gruber or Greg McDonnell.

A reception will follow at the Glen Rowan House. Jim Shaughnessy and Jeff Brouws, Greg McDonnell, and Stuart Klipper will sign copies of their new books, each available for purchase at a 10% discount off its retail price. (Autographed bookplates will be substituted if any of the authors are unable to attend the conference.) Shaughnessy's exhibition will again be open for viewing, and exclusive, limited edition prints of his works will be available for purchase.

Sunday, April 19

Sunday morning will feature a discussion on publishing led by a panel of magazine and journal editors. Topics will include suggestions for getting published in a variety of publications, as well as a dialogue on the confluence of railroad writing and photography. Members of the panel will include David Lester, editor of the ***R&LHS Quarterly***; Matt Van Hattem, senior editor of ***Trains***; Scott Lothes, writer and photographer.

Books Featured at the Conference

The books listed below will be featured at this year's conference. Please note that advance order is required for signed books. Signed books will be available at the reception, but you must order by **March 14, 2009**. For further details, contact the Center for Railroad Photography & Art, P.O. Box 259330, Madison, WI 53725-9330. You may request information by email at info@railphoto-art.org. The Center's website is ***www.railphoto-art.org***.

The Call of Trains: Railroad Photographs by Jim Shaughnessy
by Jim Shaughnessy and Jeff Brouws
W.W. Norton and Co.
$65.00 hardcover (Conference price: $58.50)
11 x 10 3/4 in., 224 pages / 170 duotone photographs.
Jim Shaughnessy is a revered name among railway photographers. This collection, the best of his work over a forty-year career, features photographs taken between 1946 and 1988, with an emphasis on the American railroad culture of the fifties and sixties. Jeff Brouws - a photo historian and railroad enthusiast - has contributed a biographical essay that traces Shaughnessy's beginnings photographing steam locomotives in Troy, New York, to his documentation of the dramatic steam-to-diesel transition, with an emphasis on the northeastern United States and Canada, where the concentration of railway action and often deep snow resulted in beautiful and unusual images. Not just a compendium of photographs of locomotives, this book covers the whole railroad world - the sheds, tunnels, viaducts, station yards and more. It is a wonderful document of what is arguably railroading's most compelling era.
View photos from the book on the Center's Railroad Heritage.org® Web portal.

The Antarctic: From the Circle to the Pole
Photographs by Stuart Klipper with text by Guy Guthridge, William L. Fox, Steven Pyne, and Stuart Klipper
Chronicle Books
$40.00 hardcover (Conference price: $36.00)
15 x 19 in., 175 pages / 120 panoramic color photographs
Antarctica is a place of extremes that remains largely unknown and infinitely fascinating. Stuart Klipper has travelled to the Antarctic six times in twenty years to photograph an astounding body of work. This volume offers a sweeping look at this majestic continent, which has lately become central to global climate change concerns. Shot in panoramic format - the only way to encompass a landscape that seems to stretch on forever - Klipper's work captures major features and surprising details: ships suspended in the frozen sea, glowing blue icebergs, vistas of endless snow, and troops of penguins. This volume's substantial size, panoramic shape, and unique vertical-opening case emphasize the grandeur of these austere and lovely photographs from the bottom of the world.

Locomotives: The Modern Diesel and Electric Reference
by Greg McDonnell
Boston Mills Press
$45.00 hardcover
11 3/8 x 10 1/4 in., 240 pages, approx. 300 color photographs
Greg McDonnell is an accomplished railroad writer and photographer, and one of his specialties is the modern locomotive. Based on the author's ***Field Guide to Modern Diesel Locomotives***, published in 2002, this revised and expanded volume focuses on diesel and electric locomotives built for North American railroads from the mid-1970's through 2008. The material is organized by manufacturer, and features authoritative text and beautiful color photography. The foreword is written by Jerry A. Pinkepank, the author of the original ***Diesel Spotter's Guide***, published by Kalmbach Publishing Company in 1967.

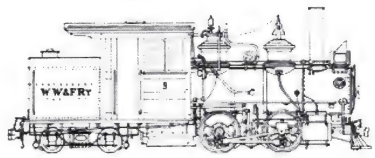
RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY
2009 Annual Meeting
June 18 – 21, 2009
South Portland, Maine

A DOWNEAST MAINE ADVENTURE

Please join us for the first R&LHS annual meeting held in The Pine Tree State. While at the end of the map and not known for its rail transportation today, Maine does have some unique rail offerings of interest. Planned highlights of the weekend include a 56.7 mile trip from Brunswick to Rockland on the Maine Eastern Railroad. On arrival in Rockland, we will visit the Lighthouse Museum located on scenic Rockland Harbor. Then we are off to the Wiscasset, Waterville & Farmington Railroad and Museum, where we board the two foot gauge train for a steam powered tour of their line. The next day's tour will take us to the well known Seashore Trolley Museum in Kennebunkport. After lunch at Federal Jack's on the Kennebunk River, we will board our motor coach for a trip to Cape Elizabeth to view the most photographed lighthouse in the U.S., the Portland Head Light. We will leave Kennebunkport via beautiful Ocean Avenue and have an opportunity to see the summer home of our 41st President, George H.W. Bush. The last stop of the day will be at the Portland Narrow Gauge Railroad where we will enjoy another two foot gauge ride. The Annual Banquet that evening will feature guest speaker Ed Burkhardt of Rail World – and of course lobster. Sunday morning's Annual Meeting and breakfast will conclude with a speaker, capping off our Downeast Adventure.

HOTEL INFORMATION

We are fortunate to have two hotels to choose from on the same property. The headquarters hotel is a full service Marriott – (marriottsouthportland.com). R&LHS members have a special rate of $149.00 (plus tax) a night. This group rate will be held until May 19, 2009. A second hotel, right across the driveway, is the Holiday Inn Express. (A buffet breakfast is included in this room rate.) R&LHS members have a special rate here of $129.00 (plus tax) a night. This group rate will be held until May 19, 2009. Each registrant will need to make their own hotel reservation. The Marriott number is 800-752-8810. The Holiday Inn Express number is 866-624-1694.



Conditions:

The Annual meeting organizers will make every effort to accommodate the physically challenged; however, the railroad activities use historic cars. Train boarding may occur in locations with unstable footing unsuitable for the physically challenged. Please contact the reservation agent for further information regarding your specific needs. No refund of purchased tickets will be made after May 15, 2009, other than by operator's cancellation of the trip or reselling of space. Registrants are urged to independently obtain trip insurance to cover cancellations resulting from personal emergencies, illness or other causes. Registrants with special dietary needs must notify the annual meeting organizers in writing when they send in their registration. A $35 fee will be assessed for checks returned for insufficient funds.

Railway & Locomotive Historical Society Annual Meeting
June 18 – 21, 2009, South Portland, Maine

Registration Package

Hotel Reservations (Registrants responsibility)
A block of rooms at a special rate has been reserved at both the Marriott Portland at Sable Oaks and the Holiday Inn Express for R&LHS members. **The deadline to take advantage of the group rate is May 19, 2009.** Marriott 800-752-8810 ($149.00). Holiday Inn Express 866-624-1694 ($129.00)

Annual Meeting Package $210.00
The registration fee includes all motor coach transfers, all admissions to planned events, a box lunch on Friday, the Annual Banquet, and the Annual Meeting and breakfast. You are on your own for Friday evening's dinner. Saturday's lunch at Federal Jack's in Kennebunk is individual settlement. The Annual Banquet Saturday evening will have a cash bar (full) at the social hour before dinner.

Thursday, June 18, 2009
Convention Registration at Marriott -- 4:00 to 8:00
R&LHS Board Meeting -- 7:30 to 11:00

Friday, June 19, 2009
Convention Registration -- 8:00 to 9:10
Bus departs Marriott at 9:15 AM for a rail excursion Downeast
5:30 Return to Marriott ---- Dinner on your own

Saturday, June 20, 2009
Bus departs Marriott at 8:45 AM for Seashore Trolley Museum
Lunch at Federal Jack's in Kennebunk – (individual settlement)
Portland Head Light and Maine Narrow Gauge
4:30 Return to Marriott
6:30 Social Hour with cash bar (full)
7:30 Banquet with guest speaker

Sunday, June 21, 2009
8:00 AM to 10:00 AM-- R&LHS Annual Business Meeting and breakfast with a guest speaker

---

Registration Fees and Meal Costs ***(for participants not purchasing the full registration package)***

Registration Fee	Number: _____	@ $25.00 each:	_____
R&LHS Banquet:	Number: _____	@ $58.00 each:	_____
R&LHS Annual Meeting/Breakfast:	Number: _____	@ $21.00 each:	_____

Full Annual Meeting package: (Includes registration fee) Number: _____ @$210.00 each _____

Total Amount Enclosed: _____

Please Print Clearly

Name of Registrant and Guest (s)_____

Address of Registrant: _____

Phone: _____ **Email:** _____ **Lobster** __ **Steak**__

Make Checks Payable to R&LHS 2009. Mail to Jerry Angier, Convention Chair, 120 Exchange Street, Suite 406, Portland, ME. 04101. Questions? Call (207-772-2333) or email: jerry4ins@aol.com

Southeast Chapter Enjoys Annual Banquet in Private Business Car

The Southeast Chapter Annual Banquet was held Friday, January 9th aboard the Georgia 300, a private business car owned by Mr. Jack Heard of Fernandina Beach. Jack is a long-time friend of many railroad enthusiasts around the country. Jack allowed the chapter to use the car at the request of our previous chairman, Bill Howes. The car was originally built in 1930 in Chicago, IL as a full sleeping car. The original name was the ***General Polk***, and it was assigned to service from Atlanta to New Orleans. The Georgia Railroad acquired the car in 1949, and converted it to a business car, and renamed it to the ***Georgia 300***. The car served the executives and guests of the railroad until it was retired in 1982. Following four years of storage, it was purchased by Jack Heard, and was placed in service in 1987.

The Chapter officers for 2009 are Reid Adams, Chairman, John Leynes, Vice Chairman, Robert Van Nest, Treasurer, and Paul Newtson, Secretary.

On a sad note, Bill Howes recently reported that Southeast Chapter member Alan T. Tattersall of Jacksonville, Florida, passed away on October 31, 2008.

Southern California Chapter Hosts National President, J. Parker Lamb

At the November, 2008 meeting of the Southern California chapter, J. Parker Lamb, president of the Railway & Locomotive Historical Society, presented a program on California railroads in the early 1950's featuring photographs that he took on summer trips to visit relatives in the Central Valley. He also spoke about the ability of software to restore photos. Before the meeting, Mr. Lamb toured the chapter's exhibit at the Fairplex in Pomona.

At the December meeting, author Ed Saalig presented a program on Santa Fe RDC cars. Three DVDs were used to present the history of the cars from when they were acquired by Santa Fe to today, when one has been scrapped and the other is being restored by the Pacific Rail Society. One DVD was devoted to the story of Mary Lou Cashin, who survived a 1956 accident involving the RDC cars in Los Angeles, that was the worst railroad accident in California.

Chicago Chapter Discusses the Original Wisconsin Central

Way back when, in the late 1880's in fact, one of the last railroads to build into Chicago arrived from the north. The group of Wisconsin railroads operated collectively as the Wisconsin Central Lines had previously terminated (and over trackage rights, too) at Milwaukee, depending on the Milwaukee Road to forward its passenger and freight business to Chicago. However, when in 1885, the WC completed a line into the Twin Cities, it was suddenly able to solicit traffic that would otherwise have gone to the Milwaukee Road from those points, leaving that line only the short haul from Milwaukee to Chicago. The Milwaukee Road refused to handle such traffic, and the Wisconsin Central suddenly was faced with the need to build its own line into Chicago or die.

Member David Leider has been working for several years on a history of the construction the WC from Schlesingerville, Wisconsin, into Chicago, and at the chapter's December meeting, he presented an illustrated synopsis of this project. The story is intriguing, involved, and almost impossible to believe. The tale of what happened to the WC after getting to Chicago until it was leased by the Soo Line in 1909 was also covered, as well as a look at some of the towns along the line.

Marketplace

FOR SALE: A new book, ***The Michigan Central Railroad: History of the Main Line 1846-1901*** by Nicholas A. Marsh, a limited private printing, distributed by Atlas Books, 30 Amberwood Parkway, P.O. Box 388, Ashland, OH 44805. Hardcover, laminated color jacket, 350 pages, 150 illustrations (17 in color), system maps, preface, introduction, footnoted text, appendices, bibliography, index. Marsh draws on archival records, rare photographs and artifacts to tell the colorful story of the pioneer railroad. This is the first history dedicated to the MCRR written by the great grandson of a company section boss. $45.00 plus $4.50 shipping from www.atlasbooks.com or toll free at 1-800-247-6553.

CALL TO ACTION! Thousands of rail cars, including both new and historic fallen flags, have been vandalized with graffiti over the past decade. Help stop this crime. Report any suspicious trespassing to the railroad or local police.
NS 800-453-2350, CSX 800-232-0144, UP 888-877-7267, BNSF 800-832-5452, CN 800-465-9239, CP 800-716-9132, KCS 877-527-9464.

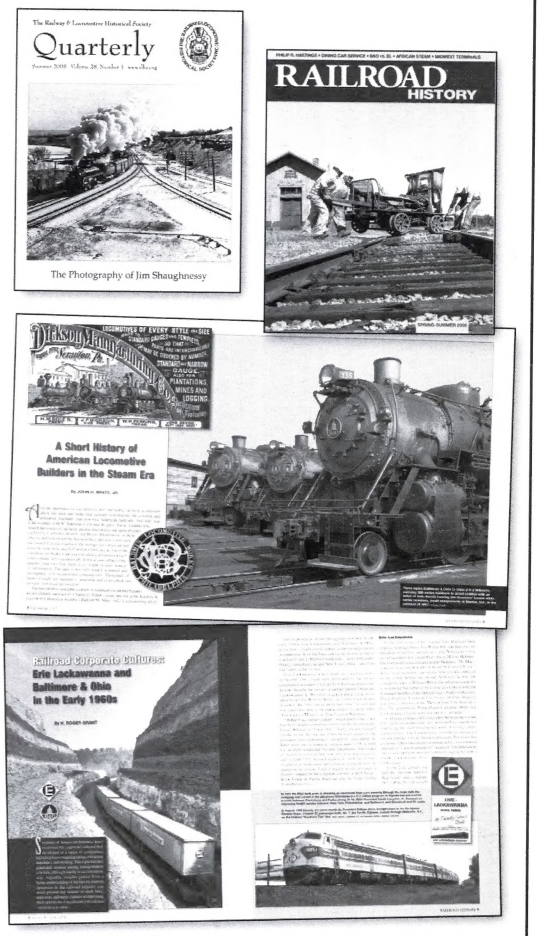
North America's original railroad historical society

Experience a coast-to-coast journey through railroad history

Founded in 1921, The Railway & Locomotive Historical Society is the oldest organization in North America devoted to the study of rail history, and among the first anywhere to pursue formal studies in the history of technology.

With your annual membership, you'll receive two issues of *Railroad History*, the most authoritative journal of its kind, and four issues of *The R&LHS Quarterly*, devoted to short-form historical stories and R&LHS activities. You'll also be eligible to attend the annual convention, providing insider's access to some of the most noteworthy railroading sites in the country. Affiliation with regional Chapters is another optional benefit of R&LHS membership, providing even more opportunities to meet and share common interests in the pursuit of railroad history.

The Railway & Locomotive Historical Society combines world-class scholarship with unapologetic enthusiasm. Our publications are filled with original, primary-source research from the best interpreters of rail history in the field. Coverage ranges from the industry's beginnings right up to the present. In our pages, you'll learn not only the who, what, and when of railroading; you'll learn the why. Nobody tells you what it all means like we do.


Quarterly
The Photography of Jim Shaughnessy
RAILROAD HISTORY
A Short History of American Locomotive Builders in the Steam Era
Railroad Corporate Cultures: Erie Lackawanna and Baltimore & Ohio in the Early 1960s

Join today! Learn more at www.rlhs.org

Annual membership in the Railway & Locomotive Historical Society, Inc. (R&LHS) is available in the following categories:

- ☐ Individual $32
- ☐ Family $37
- ☐ Library/Institutional $65

(Add $7 for Canada/Mexico, and $18 for other countries)

Optional individual annual membership levels include:

- ☐ Contributing $60
- ☐ Sustaining $100
- ☐ Patron $250

(Add $7 for Canada/Mexico, and $18 for other countries)

TOTAL PAYMENT ENCLOSED: $ _____

Method of payment (in U.S. funds):

Check # _____ (must be drawn on a U.S. bank)

Credit card: ☐ MasterCard ☐ Visa

Please complete all of the following information in order for your credit card to process successfully:

Card # ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Exp. Date: ☐☐/☐☐ (mo./yr.)

Name as it appears on card:

(Please PRINT) _____

Signature: _____

Please PRINT the following information:

Name _____

Spouse's name, if applicable _____

Mailing address _____

_____

City _____ State/Province _____

Country _____ Zip Code/Postal Code _____

Phone _____ E-mail _____

Special interests: _____

_____

Please detach and return this completed form with your payment to:

Dick Hillman, R&LHS Membership Secretary, Dep't. RC,
3605 Sandy Plains Road, Suite 240-198,
Marietta, GA 30066-3066

R&LHS membership applications paid with MasterCard or Visa may also be submitted using our secure server at www.rlhs.org

The Railway & Locomotive Historical Society, Inc.
3605 Sandy Plains Rd., Suite 240-198
Marietta, GA 30066-3066

www.rlhs.org
ADDRESS SERVICE REQUESTED
DATED MATERIAL

Prsrt Std
US Postage
PAID
Permit 3259
Atlanta, Georgia

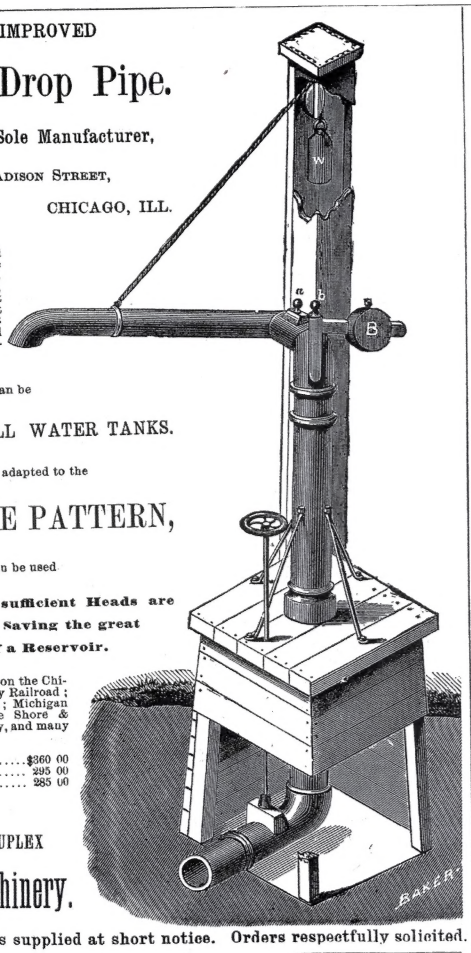
PATENT IMPROVED

Rotating Drop Pipe.

G. C. MORGAN, Sole Manufacturer,

188 WEST MADISON STREET,

CHICAGO, ILL.



It is Water-tight and will accommodate itself to the varying heights of Tenders. It is simple in construction, and the best and cheapest Pipe now in use. Weight W for single track, weight B for double track; small *a* and *b* represent anti-freezing oil-cups.

It can be

ADAPTED TO ALL WATER TANKS.

Is especially adapted to the

STAND PIPE PATTERN,

And can be used

Where Springs of sufficient Heads are found, thereby Saving the great Expense of a Reservoir.

The Pipe is now in use on the Chicago, Burlington & Quincy Railroad; Chicago & Alton Railroad; Michigan Central Railroad; Lake Shore & Michigan Southern Railway, and many others.

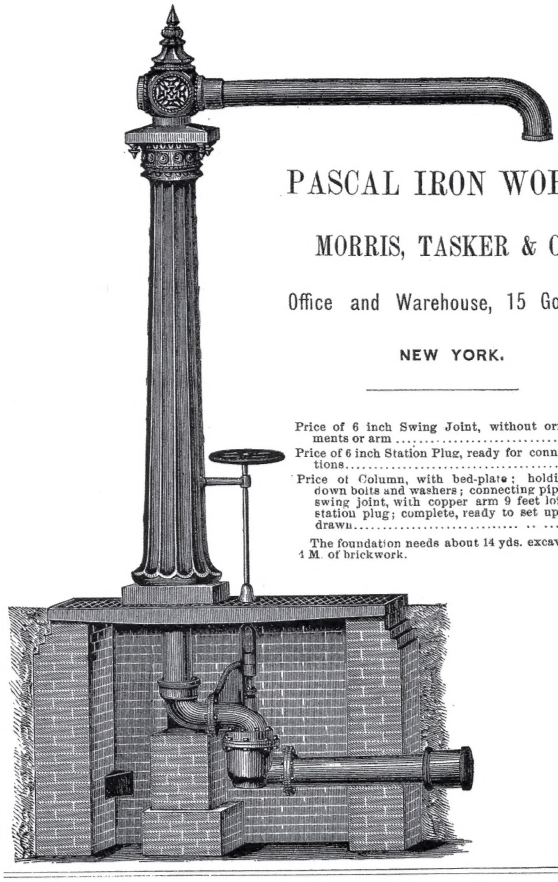
Eight Inch Stand Pipe	$360 00
Seven Inch Stand Pipe	295 00
Six Inch Stand Pipe	285 00

WORTHINGTON DUPLEX

Pumping Machinery.

Valves & Hydrants supplied at short notice. Orders respectfully solicited.

STATION WATER COLUMN.



PASCAL IRON WORKS.

MORRIS, TASKER & CO.,

Office and Warehouse, 15 Gold St.,

NEW YORK.

Price of 6 inch Swing Joint, without ornaments or arm	$45 00
Price of 6 inch Station Plug, ready for connections	75 00
Price of Column, with bed-plate; holding-down bolts and washers; connecting pipes; swing joint, with copper arm 9 feet long; station plug; complete, ready to set up as drawn	475 00

The foundation needs about 14 yds. excavation and 1 M. of brickwork.